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# **THE IMPACT OF CYBERBULLYING ON USERS' CONTINUANCE INTENTION: THE ROLES OF PERCEIVED CYBERBULLYING SEVERITY AND COPING MECHANISMS**

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## **Abstract**

*Cyberbullying is a term that encompasses aggressive behaviours performed through different information and communication technologies (ICT), with the intention to harm or cause discomfort on others. Cyberbullying has gained prominence with the media and government institutions, due to reported cases of suicides linked to cyberbullying (in countries like Canada, US, and UK). Researchers in different areas have studied the prevalence and outcomes of cyberbullying (e.g., truancy) and strategies used by victims to deal with cyberbullying (e.g., email address change). However, there is a lack of a comprehensive view of the victims' perceptions of cyberbullying and its consequences for victims' lives. Moreover, information systems (IS) researchers have not investigated how cyberbullying may affect user's perceptions and experience with ICT. This study combines the Transactional Theory of Stress and Coping with the Expectation-Confirmation Model of IS Continuance to propose a research model that will aid in understanding the negative impacts of cyberbullying for both victim's lives and their experiences with ICT. The role of coping mechanisms on various elements of the proposed model is also examined. A survey-based study is proposed to empirically validate the proposed theoretical model, using structural equation modelling techniques.*

*Keywords: Cyberbullying, Stress, Coping, IS continuance, Strain, ICT beliefs*

## 1. Introduction

Although there is not a unique definition of cyberbullying, this concept can be defined as hostile or aggressive behaviours performed through information and communication technologies (ICT) (e.g., email, mobile phones) that are intended to harm or inflict discomfort on others (Johnson, 2011). Cyberbullying is a phenomenon that can have varied consequences on the victim (e.g., depressive symptoms; Johnson, 2011). In extreme cases, the consequences may lead the victim to commit suicide (Wenger, 2012). Studies in cyberbullying in the area of Information Systems (IS) have focused mainly on the prevalence of this phenomenon (e.g., Calvete et al., 2010), and the potential motivations of online aggression (e.g., gaining social status; Law et al., 2012). Although some researchers have conducted qualitative or case-based studies to explore the outcomes of cyberbullying (e.g., academic and psychosocial problems; Beran & Li, 2007) and strategies used by victims to deal with cyberbullying (e.g., changing email addresses; Parris et al., 2011), there is a lack of a comprehensive view of the victims' perceptions of cyberbullying and its impact on victims' lives. Moreover, researchers in the IS area have not investigated how cyberbullying may affect users' perceptions and experiences with ICTs.

This study addresses the above gaps by investigating the mechanisms through which cyberbullying negatively impacts users' satisfaction with and intention to continue using ICTs through which the cyberbullying occurred (henceforth to be referred to as cyberbullying medium). Specifically, this study seeks to: (1) understand how Perceived Cyberbullying Severity (PCS) might negatively impact victims' personally (i.e., anger, anxiety, and strain) as well as its impacts on victims' ICT beliefs, which, in turn, may potentially impact victims' satisfaction and intention to continue using the cyberbullying medium; and (2) examine the effects of victims' employing various coping mechanisms on reducing the negative impacts of cyberbullying.

## 2. Theoretical background

**Transactional Theory of Stress and Coping (TTSC):** Lazarus and Folkman (1984) proposed a transactional approach of the stress process. TTSC has appraisal as its central concept, and defines it as "the process of categorizing an encounter, and its various facets, with respect to its significance for well-being" (Lazarus & Folkman, 1984, p. 31). Specifically, the theory includes a primary appraisal of the stressor and a secondary appraisal of the coping mechanisms available to deal with the stressor. In the primary appraisal phase, individuals determine if and how the situation is relevant to their goal commitments or well-being. If the situation is irrelevant, stress is not aroused. When the situation negatively affects goals and/or well-being, individuals move to the secondary appraisal phase to evaluate their options in terms of coping with the stressful situation. Together, these two phases determine the extent to which a situation is appraised as harm, a threat, or a challenge (Folkman, 2008). Harm refers to damage that has already occurred, and threat refers to a future potential damage. Finally, challenge produces a positive motivation in individuals to overcome obstacles (Lazarus & Folkman, 1984). According to Folkman (2008), coping processes are initiated in response to this appraisal of the situation. There are at least two major functions of coping (i.e., the purpose of a particular coping mechanism): (i) Problem-focused coping, which is aimed at managing the stressful situation (e.g., action coping, instrumental support); and (ii) Emotion-focused coping, which is aimed at regulating emotions tied to the stressful situation (e.g., emotional support). Individuals may invoke these mechanisms separately or in combination, depending on the situation they are facing (Lazarus & Folkman, 1984).

**Expectation-Confirmation Model (ECM) of IS Continuance:** Bhattacharjee (2001) formulated the ECM of IS Continuance, which posits that user's intention to continue using an ICT is determined primarily by his or her satisfaction with prior use. Satisfaction is determined in turn by post-acceptance

expectation, represented in this model with the construct perceived usefulness (PU). Confirmation, which implies a realization of the expected benefits of ICT use, has a positive influence on satisfaction (Bhattacharjee, 2001). Confirmation is also positively associated with PU, as confirmation increases user's perceived usefulness of the ICT. Finally, PU impacts continuance intention directly. Bhattacharjee (2001) argues that as users continue using ICTs, their instrumental beliefs (i.e., PU) may override low affect (i.e., low satisfaction) in their motivation to continue using the ICT.

### 3. Research model and hypotheses

The proposed research model is shown in Figure 1. The constructs and hypotheses included in the model, along with their appropriate support, are described below. It should be noted that our purpose is not to investigate relations between constructs in the ICT beliefs group or the personal impacts group in our model, but rather to examine their impacts on satisfaction and continuance intention.

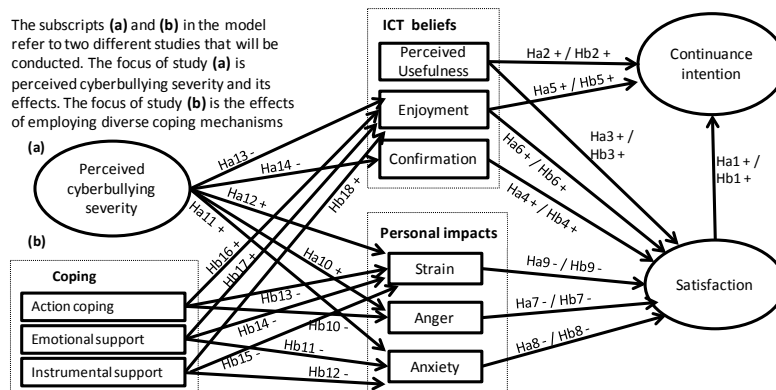


Figure 1. Research model

**Continuance intention:** This construct refers to an individual's intention to continue using an IS, beyond initial adoption (Bhattacharjee, 2001). Users' intention to continue using a system is deemed critical in the success of an IS, and thus, this construct is selected as the endogenous variable for our study. As per Bhattacharjee (2001), continuance intention is positively impacted by satisfaction (Ha1, Hb1) and perceived usefulness (Ha2, Hb2). Satisfaction in turn, is positively impacted by perceived usefulness (Ha3, Hb3) and confirmation (Ha4, Hb4). Other IS scholars have extended the ECM of IS continuance to include enjoyment, which refers to the pleasure derived from using the technology in its own right (Carroll, 1988). This construct is positively related to continuous intention (Ha5, Hb5) and satisfaction (Ha6, Hb6) (Thong et al., 2006).

**Negative emotions:** Studies in the consumer behaviour literature have found a relationship between emotions and product or service satisfaction, where satisfaction is decreased by negative emotions (e.g. shame, anger, and disgust) and increased by positive ones (Wang et al., 2009). In the case of cyberbullying, the negative emotions of anger and anxiety are frequently reported by victims (Johnson, 2011) and are posited to negatively affect satisfaction. Anger is defined as a feeling accompanied by a belief that a person one cares for (e.g. the self) has been disrespected (Fernandez and Turk, 1995). Wang et al. (2009) found that negative emotions such as anger influenced negatively users' satisfaction with the Blackboard Learning System. Similarly, it is expected that anger resulting from a cyberbullying episode will negatively impact individuals' satisfaction with the cyberbullying medium (Ha7, Hb7). Anxiety can be defined as the uneasiness of expecting an uncertain threat (Lazarus, 1991). Anxiety is one of the most studied emotions in the IS literature, and researchers have found that it is negatively related to attitude towards use (e.g., Brown et al., 2004). Satisfaction is similar in nature to the construct of attitude towards

use, as both are affective constructs. Therefore, it is expected that satisfaction with the cyberbullying medium will be negatively impacted by anxiety resulting from a cyberbullying episode (Ha8, Hb8).

**Strain:** Strain refers to the outcome resulting from perceived stress (Decker & Borgen, 1993). Strain can be manifested in decreased productivity, somatic or affective problems, and problems with colleagues or family members (Osipow & Doty, 1985) and is negatively related to job satisfaction (Fogarty et al., 1999). In the same vein, it is expected that strain resulting from a cyberbullying episode will negatively impact victim's satisfaction with the cyberbullying medium (Ha9, Hb9).

**Perceived cyberbullying severity (PCS):** Individuals subjected to cyberbullying episodes show signs of stress triggered by these episodes (Parris et al., 2011), and as such, the episodes can be considered as stressful situations that will trigger the appraisal and coping mechanisms described by TTSC. As stated in TTSC, "people and groups differ in their sensitivity and vulnerability to certain types of events, as well as in their interpretations and reactions" (Lazarus & Folkman, 1984, p. 22). This highlights the importance of the appraisal process (i.e., evaluating the severity of the episode - PCS) after cyberbullying episodes have occurred. At a personal level, PCS may lead individuals to appraise the episode as either harmful or threatening to different extents. Harm appraisals are accompanied by emotions such as anger, and appraisals of threats are accompanied by anxiety (Folkman, 2008), and therefore, it is expected that PCS will be positively related to anger (Ha10) and anxiety (Ha11). Moreover, it is expected that PCS may lead victims to experience strain (Ha12), as they may experience problems at home and at school (Johnson, 2011). There is evidence to suggest that stressful episodes can negatively impact the medium or venue where the episode took place (e.g., teachers' verbal aggression impacts students' enjoyment of classes; Bekiari et al., 2006). Since cyberbullying episodes occur through IS (e.g., email, Facebook), it is expected that PCS may negatively impact the enjoyment an individual derives from using the cyberbullying medium (Ha13). Furthermore, as victims do not expect to be harassed when using IS, it is expected that PCS will also negatively impact victim's confirmation of expectations (Ha14).

**Coping mechanisms:** Coping can be defined as the adaptive processes individuals follow to reduce stress effects on mental and physical health (Kishita & Shimada, 2011). The literature identifies three types of coping in stressful situations, such as cyberbullying, which can be used to reduce stress effects. Action coping refers to "direct, objective attempts to manage a source of stress" (e.g., blocking bully's contact) (Duhachek, 2005, p. 44). Action coping helps individuals reduce anger (Izard, 1977), such as that resulting from PCS (Hb10). Emotional support coping can be defined as "attempts to marshal social resources to improve one's emotional and/or mental state" (e.g., seeking out others for comfort) (Duhachek, 2005, p. 44). Instrumental support coping involves "attempts to marshal social resources to take action towards ameliorating a stressor" (e.g., get advice from someone about what to do) (Duhachek, 2005, p. 46). Beaudry and Pinsonneault (2010) found that seeking social support helps individuals overcome their anxiety. In light of this finding, it is expected that using emotional and/or instrumental coping will help individuals to decrease the anxiety derived from PCS (Hb11, Hb12). The three types of coping mechanisms have been shown to reduce strain derived from workplace stressful situations (Decker & Borgen, 1993). In the same vein, it is expected that these coping mechanisms will help individuals reduce the strain derived from PCS (Hb13, Hb14, Hb15). Finally, these coping mechanisms increase the enjoyment of certain activities (e.g., sports; Kim & Duda, 2003). It is posited they will also positively impact victims' enjoyment of the cyberbullying medium (Hb16, Hb17, Hb18). A summary of hypotheses is presented in Table 1 below, along with the constructs and sources for their scales.

Hypothesis	Constructs (sources of constructs' scales) & Hypotheses
Ha1 & Hb1	Satisfaction (Bhattacharjee, 2001) $\pm$ Continuance intention (Thong et al., 2006)
Ha2 & Hb2	Perceived usefulness (Lu et al., 2005) $\pm$ Continuance intention
Ha3 & Hb3	Perceived usefulness $\pm$ Satisfaction

Ha4 & Hb4	Confirmation (Bhattacharjee, 2001) $\pm$ , Satisfaction
Ha5 & Hb5	Enjoyment (Ghani & Deshpande, 1994) $\pm$ , Continuance intention
Ha6 & Hb6	Enjoyment $\pm$ , Satisfaction
Ha7 & Hb7	Anger (Ilfeld, 1978) $\Rightarrow$ Satisfaction
Ha8 & Hb8	Anxiety (French et al., 1982) $\Rightarrow$ Satisfaction
Ha9 & Hb9	Strain (Osipow, 1998) $\Rightarrow$ Satisfaction
Ha10 / Hb10	PCS $\pm$ , Anger / Action coping (Duhachek, 2005) $\Rightarrow$ Anger
Ha11 / Hb11	PCS $\pm$ , Anxiety / Emotional support (Duhachek, 2005) $\Rightarrow$ Anxiety
Ha12 / Hb12	PCS $\pm$ , Strain / Instrumental support (Duhachek, 2005) $\Rightarrow$ Anxiety
Ha13 / Hb13	PCS $\Rightarrow$ Enjoyment / Action coping $\Rightarrow$ Strain
Ha14 / Hb14	PCS $\Rightarrow$ Confirmation / Emotional support $\Rightarrow$ Strain
Hb15	Instrumental support $\Rightarrow$ Strain
Hb16	Action coping $\pm$ , Enjoyment
Hb17	Emotional support $\pm$ , Enjoyment
Hb18	Instrumental support $\pm$ , Enjoyment

Table 1. Summary of proposed hypotheses, constructs, and sources for their scales

## 4. Methodology

Participants in this study will be university students identified as having experienced cyberbullying within the past two months. This time period has been used by other researchers to collect data about situations experienced in the past (e.g., Beaudry and Pinsonneault, 2010). Data will be collected at one point in time using a survey, where two groups of participants will be asked to recall the most recent cyberbullying episode they experienced. Participants in the first group (study a) will be asked to think back to the time the episode happened, and focus on the perceived cyberbullying severity, as well as its impacts at that time (hypotheses Ha1-Ha14). Participants in the second group (study b) will be asked to focus on the extent to which they invoked various coping mechanisms to deal with the cyberbullying episode, as well as their personal impacts and experiences with the cyberbullying medium at the time the survey is administered (hypotheses Hb1-Hb18). Having two groups will allow for validating the proposed research models, while avoiding confounding effects. Demographics will be collected for both groups. Open ended questions will be used to gather details about the cyberbullying episode: type of cyberbullying (e.g., receiving offensive messages), cyberbullying medium (e.g., Facebook), duration, and previous exposure to cyberbullying.

**Measurement instrument:** In order to ensure content validity, scales for all constructs except for PCS will be selected from the extant literature and will be adapted to reflect the context of the study. A list of the constructs and the sources for their scales can be found in Table 1. PCS will be measured during the pilot using a combination of adapted items from Johnston and Warkentin (2010) and Moss-Morris et al. (2002). Following the pilot test, items with the highest loadings will be selected, following Venkatesh et al.'s (2003) procedure. The pilot study will be used in order to refine the measurement scales used for the constructs in the model. All the appropriate validity tests will be performed. Common method bias will be examined using the approach outlined by Liang et al. (2007).

**Model validation, sample size, and post hoc analyses:** Structural Equation Modeling (SEM) will be used to validate the proposed model. In particular, Partial Least Squares (PLS) will be used as it is suitable for exploratory studies, and imposes minimum demands in terms of sample size and data distribution (Chin, 1998; Gefen et al., 2000). The minimum sample size required for PLS is determined by ten times the items of the most complex construct of the model (i.e., strain, 18 items) (Gefen et al., 2000), and thus a minimum sample size of 180 participants is required for each group. However, and considering the possibility of having spoiled surveys, 400 participants will be recruited for each group. Post hoc analyses (i.e., testing of a saturated model, qualitative analysis with open ended questions) will be performed.

## 5. Potential contributions and limitations

From an academic standpoint and to the best of the researcher's knowledge, this is the first known study to measure the impact of cyberbullying episodes on users' satisfaction with and intention to continue using ICT. Second, this study contributes to the advancement of the cyberbullying literature by including and validating a *perceived cyberbullying severity* (PCS) construct. This construct will provide a baseline for researchers to use when analyzing the prevalence of the cyberbullying phenomenon and the varied responses to cyberbullying episodes. Third, this is the first known empirical study in the IS field that combines TTSC and ECM of IS Continuance in one research model. From a practical perspective, this study will help individuals interacting with cyberbullying victims (e.g., parents, professors) understand the impact of cyberbullying on victims' lives. It will also help technology providers gain a better understanding on the way victims use technology to cope with cyberbullying episodes, which can result in better design and development of coping tools in their applications (e.g., privacy settings, access to counsellors' sites). Results from this research can also help direct psychologists' attention to the most effective coping strategies victims can employ to overcome the negative consequences of cyberbullying.

As with any research project, this study has some limitations. The first limitation is generalizability as the experiences of university students may not be generalizable to adolescents, who face identity issues and drastic physical changes (Johnson, 2011) that may influence their appraisal of cyberbullying. The second limitation is that the proposed model does not contemplate possible variations that may arise due to cultural factors and individual differences. These elements may be included in future research studies.

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